endeavoured to anticipate Bedriaga over the nomenclature of a reptile by a falsely dated pamphlet.

I have unfortunately had to call attention in the 'Annals' to more than one case of dishonest methods to obtain priority; but this seems to me to be the most glaring example yet brought to light.

C. Davies Sherborn
(Index gen. et spec. anim.).

On Bees and Honeysuckles. By Thomas Meehan.

I was interested to-day (June 18th) in noting that while a few honey-bees persistently collected nectar from the mouths of honeysuckles, by far the larger number collected from the fallen flowers only.

The plant was *Lonicera japonica*, in the two forms known in gardens as *L. brachypoda* and *L. flexuosa*, both intertwining and flowering together. I have in the past satisfied myself that a bee which starts from the hive for pollen pays no attenti n to gathering nectar, while the one looking for nectar collects that only. Whether this is the course of labour for that trip from the hive only, or whether these particular tasks occupy the whole day or more, may be an interesting question. I had never noted bees collecting nectar from fallen flowers, indeed had not noted that fallen flowers had nectar; so that the attention of the bees to them gave the subject a double interest.

The flowers are white when freshly opened, the next day yellowish, the following they wither slightly and fall. Large numbers are collected by the leaves, on which they mostly lie till they turn brown and shrivel completely. Those which were badly shrivelled seemed preferable to the bees.

On cutting across the tube of a white corolla near the base, and then gently stripping the flower downwardly, a large globule of nectar protrudes. The same process executed on the older or yellow flower gives about the same quantity, as also does the faded flower of the third day. In the dried flower, taken before much shrivelling had occurred, nearly as much nectar was found. The completely shrivelled and twisted flower could not be "stripped" of its secretion in this way, but it was certainly present and as abundant. The bees carefully sought what would have been the mouth of the corolla, and then extracted the sweets from that point. It soon became evident that the shrivelling and contracting of the tube of the corolla acted in the same manner as the thumb-nail and finger in "stripping," lessening the diameter of the tube, and forcing the nectar towards the mouth and within the reach of the visiting insect.

As noted, the bees collecting nectar from these dead flowers never visited the fresh opening ones, while the few visiting the fresh flowers never visited the dead or dying ones; a very careful watch of half an hour satisfied me on this point. It was noted that the latter took considerable time and much laboured effort with each flower. There was an average of fifteen seconds to each flower, a very long time for the average honey-making bee. Those working on

the drying flowers made no more than the ordinary effort of bees with fresh flowers. It was difficult to understand why in the same variety of insect each should have its own line of procedure. If it should be suggested that bees could profit by experience, and that those which confined themselves to the freshly opened flowers were young bees that had yet much to learn, there still remains the fact that they did not profit by the experience of the older bees. Sometimes almost side by side it might be supposed that any creature that could profit by experience would want to know what the one picking at a dried flower had found.

The relation between insects and flowers obtrudes itself here. Many plants, as I have placed on record, shed their pollen and cover the stigma before the opening of the corolla. Whether the stigma is in receptive condition or not, the pollen remains there till it is, and we may regard all such as "arranged for self-fertilization," if, indeed, there is any such special arrangement in the vegetable world wholly with this view, or with the special view of cross-fertilization. But in this honeysuckle the anther-sacs burst immediately on expansion, and the anthers are in such close position to the stigma that it can scarcely do aught but receive its own-pollen. All the flowers examined seemed to have the stigmas completely covered with pollen, and, I feel pretty sure, with own-pollen. My plants are, however, infertile, rarely a few berries mature. I should refer this to propagation from an infertile plant, as we frequently find to occur in all classes of ligneous plants, which fruit neither with own-pollen nor foreign pollen, rather than to any want of ability in own-pollen to produce fertilization as an abstract principle, as would be assumed by some.

There still remains to be discussed why all this large amount of nectar should be secreted by the flower with no apparent benefit to itself in any conceivable way. But it is not safe to say that, because we cannot see that any benefit results in relation to the visits of insects, it is of no value in some as yet undiscovered operation in the economy of nature. For aught we know it may be an excretion rather than a secretion, which it may be as much an advantage to get rid of when of no further use to the plant, as it is an advantage to get rid of the corolla itself.

A very curious circumstance in connexion with these observations was the discovery that each of these two forms of the *Lonicera japonica* have different times of the day for the opening of its blossoms. The expansion, as in so many points of growth, is rhythmic, and not a continuous effort. In the form known as *Lonicera flexuosa* the lobes of the corolla parted, so as to admit of the protrusion of the stamens, at 2 P.M. Further efforts at expansion rested till 4 P.M., when the act was resumed and completed. *L. brachypoda* commenced opening at 5 P.M., and completed the opening by 7 P.M.

There is no reason why variation may not occur in the behaviour of plants as well as in the parts of their structure; but it is difficult to conceive of any physiological value in these variations from any point of view in the economy of plant-life.—*Proc. Acad. Nat. Sci. Philad.* 1894, pp. 169–171.